REMARKS

Claims 1-12 are pending in the above-identified application. It is requested that the change to claim 1 be entered under 37 C.F.R. 1.116. This change does not raise any significant new issues and at least places the claims into better form for appeal, should an appeal be necessary. This change to claim 1 provides a clear, patentable distinction over the cited prior art as discussed below.

Issues Under 35 U.S.C. 103(a)

Claims 1-12 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Rohr '560 (USP 5,340,560), optionally further in view of Nishimine '860 (USP 5,855,860). This rejection is traversed for the following reasons.

Present Invention and Its Advantages

The present invention provides a method for preparing particulate silica by feeding a mixture of a gaseous organohalosilane such as a methylchlorosilane, typically methyltrichlorosilane, which is a by-product in the synthesis of dimethyldichlorosilane from metallic silicon and methyl chloride, with a flammable gas capable of generating water vapor when burned,

typically hydrogen, and a free oxygen-containing gas, typically air, to a reaction chamber through a burner, thereby subjecting the organohalosilane to flame hydrolysis and then oxidation reaction.

In scheme (I) at page 8 of the specification, n in $(n/2)H_2O$ is defined as an integer of 1 to 3. The molar amount of water vapor resulting from combustion of the flammable gas is 1.0 to 6.0 times and preferably 1.0 to 2.0 times the stoichiometric amount (n/2). Accordingly, it is calculated that the preferable upper limit of the flammable gas (H_2) is 3 mol when n=3 (i.e. 2.0 times x 3/2).

It has been found by the inventors that if the amount of the flammable gas fed is ½ to 3 mol per mol of the organohalosilane and the amount of water vapor resulting from combustion of the flammable gas is 1 to 6 times the stoichiometric amount in reaction scheme (I) shown above, the burner used is one having a plurality of concentric tubes, and the gas mixture is fed to the center tube of the burner such that it may have a linear velocity at the outlet of the center tube of 50 to 120 m/sec, calculated in the standard state, there is advantageously obtained particulate silica having a specific surface area of 100 to 400 m^2/g and a narrow particle size distribution as demonstrated by a logarithmic standard deviation of primary particle diameter of up to 0.5 and ensuring the transparency of silicone moldings filled therewith.

Distinctions Between Present Invention and the Rohr '560 and Nishimine '860 Documents

Rohr '560 relates to a method for making fumed silica, particularly to burning a mixture of a fuel, such as hydrogen, a silicon compound, such as silane or an organosilane, and oxygen or an oxygen containing gas in a combustion chamber to produce aggregates having an average convex perimeter in the range of about 0.12 micron to about 0.60 micron. Rohr '560 in column 3, lines 13-17 discloses that "A mixture of about 60 wt% of CH_3SiCl_3 and about 40 wt% of $SiHCl_3$ within about a 1.3 to 1.5 mol% range can be satisfactory used with … about 10 to about 25 mol% hydrogen. Thus, Rohr '560 discloses that the ratio of hydrogen to the organosilane ranges from 6.67(=10/1.5) to 19.23(=25/1.3).

Rohr '560 fails to disclose or suggest the step of feeding ½ to 3 moles of hydrogen per mole of organohalosilane as in the present invention. Thus, Rohr '560 fails to recognize the advantages associated with the present invention with regard to advantageously ensuring transparency properties of silicone moldings.

In the present invention, by the use of a specific amount (1/2 to 3 mol) of the flammable gas capable of generating water vapor when burned such as hydrogen per mol of the organohalosilane, not

only does the flammable gas assist in forming a stable flame, but the water vapor resulting from the flammable gas is fed in a sufficient amount for the organohalosilane to hydrolyze, so that the particulate silica having a minimized variation of primary particulate diameter can be obtained, and thus the silicone moldings filled therewith are obtainable with high transparency.

Nishimine '860 fails to make up for the above-noted deficiencies of Rohr '560. Nishimine '860 is cited because of the disclosure therein of a quadruple tube burner, but this reference fails to disclose or suggest many significant features of the present invention, and even if combined with Rohr '560, fails to provide any adequate suggestion of the present invention.

Consequently, significant patentable distinctions exist between the present invention and each of the Rohr '560 and Nishimine '860 documents, whether taken separately or combined. Therefore, the above-noted rejection should be withdrawn.

Conclusion

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance.

If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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